

REMARKS

Applicant has carefully considered the Office Action of May 23, 2002 rejecting claims 6-24. The present response is intended to be fully responsive to all points of rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application are respectfully requested.

It is the object of the present invention to provide a method of making a printing plate in which the uncoated surface of a substrate is treated with a pre-treatment solution prior to the deposition of ink on the surface. The pre-treatment liquid comprises a polyvalent metal salt, and at least one of an organic swelling reagent and/or a coalescence reagent. The swelling reagent and/or the coalescence reagent and the polyvalent metal cations are physically well localized in the porous structure of the plate's surface. After partial drying of the pretreated anodized aluminum plate, CTP liquid is deposited onto the surface to form an image. The CTP liquid solids react with the pre-treatment liquid and are, therefore, chemically bound to the surface.

The Examiner has rejected claims 19 and 22 under 35 USC 112 for being indefinite. The claims have been amended to recite only the broad groups, as suggested by the Examiner.

The Examiner has rejected claims 6, 7, 9-18, 22 and 23 under 35 USC 102(b) as being anticipated by Kukharskay et al (SU 1058453A). Kukharsky discloses a composition used for increasing the mechanical strength of glass fibers. This application is far from the printing application disclosed in the application of the present invention. Additionally, the Kukharskay composition contains added components which would not be beneficial in the application of the present invention.

The Examiner has rejected claims 6, 7, 9-12, 19, 22 and 23 under 35 USC 102(b) as being anticipated by Figov et al (GB 1,492,529). Figov discloses a treatment of planographic printing blanks which provides a protective surface layer serving to inhibit abrasion of the layers of the printing blank during imaging of the blank. The protective surface layer may be removed after imaging. The present invention deals with inkjet printing which is not a function of the Figov patent.

In the Figov method, the plate is imaged and the treatment solution is then applied (see claim 12, "...wherein following imaging of the blank the latter is treated

with a treatment solution..."). The treatment of the present invention must be applied to the plate prior to the imaging. Additionally, the combination of the pretreatment liquid of the present invention with the water based CTP liquid previously patented by the inventors (See page 8, lines 7-9) creates a unique system for inkjet printing.

Although some of the components of the Figov treatment are similar to those in the pretreatment liquid of the present invention, they provide different functions than those of the present invention due to their chemical and physical properties.

For example, although DEGBE is found both in the treatment of Figov and the pretreatment solution of the present invention, its function is different in these two preparations. In the Figov treatment, DEGBE increases the sensitivity of the plate and its water receptivity by reducing the surface tension of the plate. In the present invention, DEGBE acts as a swelling reagent for the polymers found in the CTP liquid. In the Figov patent, the acid increases the sensitivity of the plate to water, while in the present invention the acid functions as a cation provider to precipitate the anionic polymers on to the surface of the plate.

The Examiner has rejected claims 6-24 under 35 USC 102(b) as being anticipated by Matsumoto et al (US 5,064,649). Matsumoto discloses a concentrated dampening water for a lithographic printing plate which has substantially no toxicity. Matsumoto uses no salt in his solution. The present invention deals with inkjet technology and not with lithography. The dampening water solution is used for offset printing, after imaging has been occurred (See Example 1, column 10, lines 53-68). In the present invention, the pretreatment liquid acts to improve the formation of the image before the plate is placed on the press. Thus the present invention deals with a pretreatment for formation of a plate while Matsumoto deals with a post-treatment to the printing process. In the present invention, without the pretreatment liquid a sharp image is not formed.

The Examiner has rejected claims 6-12 and 22-24 under 35 USC 102(b) as being anticipated by Gautier et al (US 4,540,448). Gautier discloses a micro-emulsion-based acid composition particularly for cleaning operations. This composition is an acidic liquid with organic components for de-greasing metal surfaces and preventing corrosion on iron surfaces. There is no connection between the two technologies, nor is there a similarity in the function of the chemicals in the respective solutions.

The Examiner has rejected claims 6, 7, 9-12 and 22-24 under 35 USC 102(b) as being anticipated by Herdt et al (US 6,121,219). Herdt discloses an antimicrobial aid cleaner for use on organic or food soil. The cleaning composition is formulated to remove carbohydrate and proteinaceous soils from beverage manufacturing locations. There is no similarity between the two technologies, nor is there a similarity in the function of the chemicals in the respective solutions.

As in the case of the Gautier patent, the purpose of the Herdt patent is to remove unwanted objects from a metallic surface, while the pretreatment liquid of the present invention seeks to better bind ink to the surface of the plate.

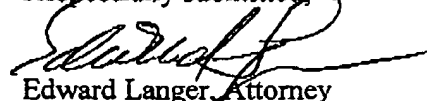
The Examiner has rejected claims 6, 7, 9-12, 19 and 22 under 35 USC 102(b) as being anticipated by Beggs et al (SU 6,017,968). Beggs discloses a thickened shear thinnable composition. This type of thickened compositions have a wide variety of uses including coating removers, graffiti removers and deicers. Again, this is a preparation for removal of unwanted objects from a surface, while the pretreatment liquid of the present invention seeks to better bind ink to the surface of the plate.

Therefore, of the references cited to Kukharskay, Figov, Matsumoto, Gautier, Herdt, and Beggs, none of them anticipates the present invention under Sec. 102(b).

As stated in the decision in In Re Marshall, 198 USPQ 344 (1978), "To constitute an anticipation, all material elements recited in a claim must be found in one unit of prior art..." Since each of the above references neither 1) identically describes the invention, nor 2) enables one skilled in the art to practice it, Applicant deems the Sec. 102(b) rejection improper, and respectfully requests that it be withdrawn.

In view of the foregoing amendments and remarks, all of the claims remaining in the application are deemed to be allowable. Further reconsideration and allowance of the application is respectfully requested at an early date.

Respectfully submitted,



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MARKED-UP VERSION OF THE AMENDMENTS

Claim 19 has been amended as follows:

19. (Once amended) The pre-treatment liquid of claim 6 wherein said polymer swelling reagent is chosen from the group consisting of: N-methyl pyrrolidone, organic esters including ~~ethyl acetate propyl acetate, butyl acetate, ethyl lactate, butyl lactate,~~ ketones including ~~acetone and methyl ethyl ketone~~ and cyclic ethers including tetrahydrofuran.

Claim 22 has been amended as follows:

22. (Once amended) The pre-treatment liquid of claim 6 wherein said coalescence reagent is chosen from the group consisting of: butyl glycol, ~~butyl carbitol~~ and glycol ethers including: ~~di(propylene glycol) methyl ether, tripropylene glycol mono methyl ether, propylene glycol mono methyl ether, propylene glycol mono propyl ether and~~ ~~depropylene glycol dimethyl ether.~~